



1080p Cube Network Camera

NCC800/NCC800WL

User Manual

Safety Notice

- The camera is intended for indoor use.
- Make sure the supplied voltage meets the power consumption requirements of the camera before powering the camera on. Incorrect voltage may cause damage to the camera.
- The camera should be protected from water and moisture, excessive heat, direct sunlight and cold.
- The installation should be made by a qualified service person and should conform to all local codes.
- Unplug the camera during lightning storms or when unused for long period of time.

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1. Overview

1.1 Introduction

Featuring 2-megapixel Full HD resolution at full frame rates, the NCC800/NCC800WL is designed for professional indoor surveillance, targeting retail shops, small businesses or offices where image quality is emphasized. The built-in infrared LED gives true, maximized night visibility in complete darkness up to 10 meters. Further enhanced by MESSOA's proprietary Lumii™ imaging technology, the NCC800/NCC800WL provides the unparalleled low light performance like no others. The camera also offers flexible installation, 2-way audio communication, and wireless connectivity to make it a comprehensive and professional business security solution.

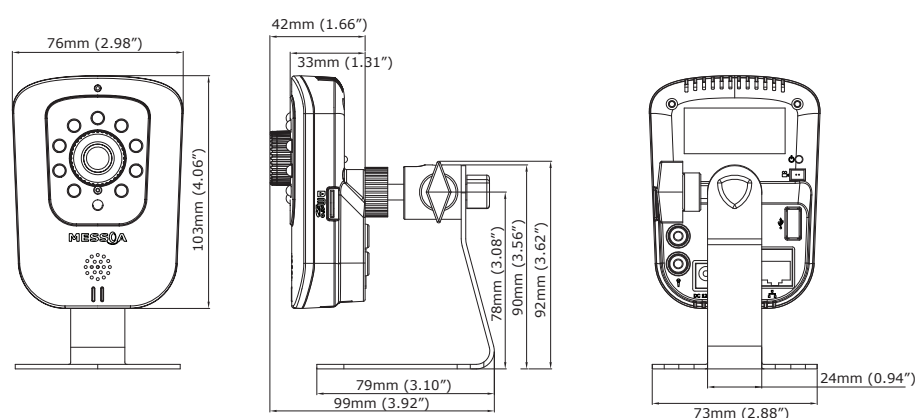
1.2 Package Contents

The package includes these items:

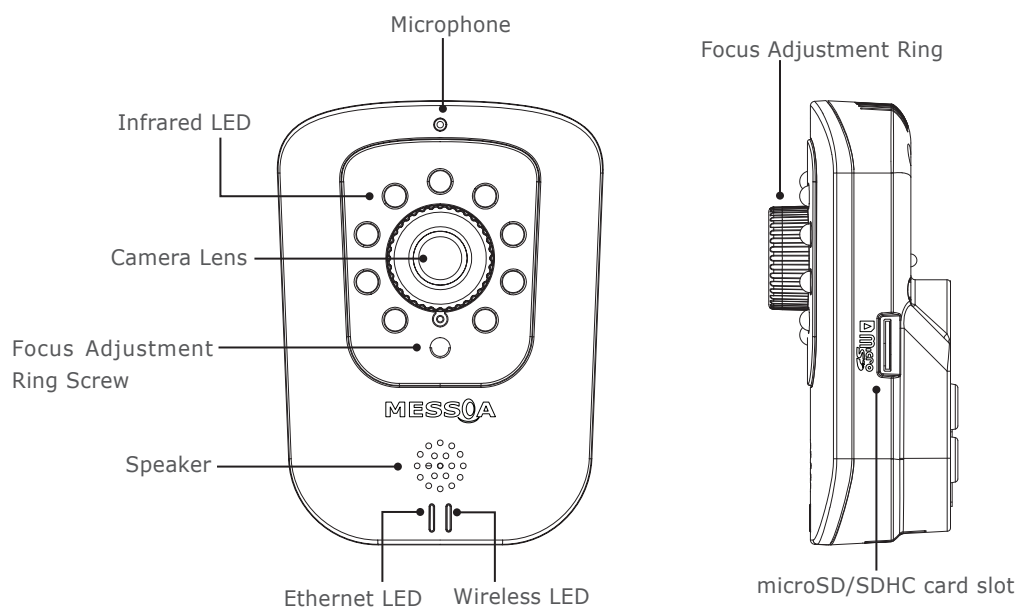
■ 1080p Cube Network Camera	x1
■ CD-ROM (User manual and IP Finder utility)	x1
■ Quick Start Guide	x1
■ Power Supply (DC 12V Power Adaptor)	x1
■ Video Cable (2-Pin to BNC Video Out)	x1
■ Bracket for wall/ceiling mount	x1
■ USB Wi-Fi Dongle (for NCC800WL)	x1

1.3 Hardware Overview

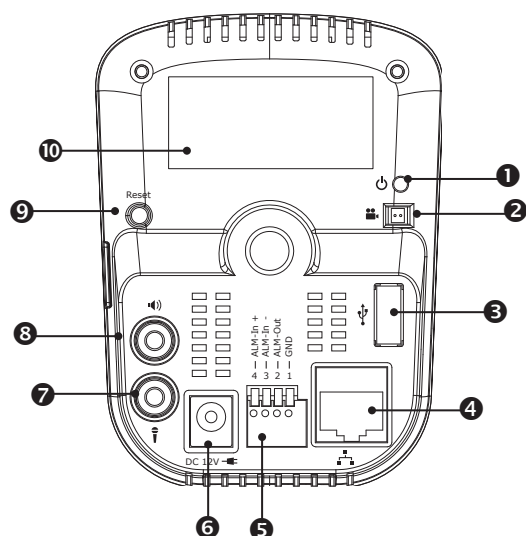
1.3.1 Dimensions



1.3.2 Front and Side View



1.3.3 Rear Panel



1. **Power LED:** The LED lights on when power is applied.
2. **Video:** To adjust focus during the installation, connect this port to a monitor using provided video cable.
3. **USB Wi-Fi Dongle slot:** Optionally connect to a USB Wi-Fi dongle for wireless function.
4. **Ethernet/PoE:** Connects to the LAN port of a standard 10Base/100Base-TX device, e.g., hub, switch or router.
5. **I/O:** Connect your external devices, e.g., sensor and alarms to the corresponding I/O terminal block. The pins of the I/O terminal block controls the following signals:

Pin	Signal	Connection
1	GND	Ground (electricity) in electrical circuits.

1. Overview

2	ALM-Out	Connect to device that responds to alarm signals. The camera uses an NMOS transistor with source connected to GND. If used with an external relay, a diode must be connected in parallel with the load to protect against transient voltages.
3	ALM-IN -	Connect to device that triggers alarm signals. Connect to external power source negative side (0V) to activate.
4	ALM-IN +	Connect to device that triggers alarm signals. Connect to external power source positive side (3.3V~5V) to activate.

6. **DC 12V:** Connect to the provided power adapter.

If you are to use power from Ethernet connection, this connector is not used.

7. **Audio In:** Connect to a microphone

8. **Audio Out:** Connect to a speaker.

9. **Reset:** Using a pointed object, hold down the reset button for about 5 seconds to restart the camera. Or hold down the reset button for longer than 5 seconds to reset the camera to the factory defaults.

10. **MAC address:** The MAC (Media Access Control) address of the camera's Ethernet interface is displayed on the camera's label. If your camera comes with a wireless dongle, then the MAC address is displayed on the dongle's label.

1.4 Specifications

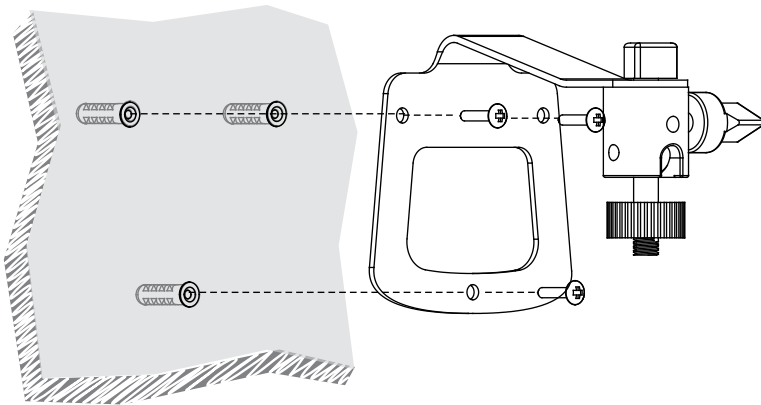
Image System	
Image Sensor	1/2.7" 2MP HD image sensor optimized for low-light performance
Image Compression	Triple Streaming : H.264 / MPEG4 / Motion JPEG
Maximum Framerate	30 fps (NTSC) and 25 fps (PAL) in 2MP Full HD 1080p (1920x1080)
Lens	Built-in fixed lens f=3.1 mm, F=2.0(Mega pixel lens)
View Angle	H: 77° ±5%; V: 57° ±5%
Electric	
Shutter Time	Range from 1/10000s to 1/3.75s selectable (60Hz); Range from 1/10000s to 1/3.125s selectable (50Hz)
Audio	Two-way build in MIC & Speaker; Mono Audio, Full-duplex, G.711 PCM 8kHz
Alarm	External input
Day/Night Mode	D/N control: Auto Mode
Minimum Illumination	IR LED OFF: 0.2lux@10IRE / 1.1lux@50IRE (F2.0, 1/15s) IR LED ON: 0 Lux
IR LED	IR LED 9 pcs(850nm)
IR Distance	10M (33ft)
IR Turn On Status	Under 10 Lux by auto control
LED Life	More than 10,000 hours (50°C)
Video Port	2 pin connector, 1.25mm wafer, 1.0Vp-p, 75Ω
Video Output	NTSC: 720 X 480 @30fps; PAL: 720 X 576 @25fps
RTC	Real-Time clock calendar
Image Enhance	Exposure Mode: Auto/Manual White Balance: Auto/Manual Backlight Compensation: 5x5 zones selectable Sharpness, Saturation, Brightness, Contrast: 255 level sensitivity
Feature Brief	
Digital WDR	Yes; 5-level sensitivity
Privacy Zone	Yes; customized threshold privacy zone
Intelligent Video	Audio Detection/ Blur Detection/ Ethernet Detection/ Smart Encoding/ Smart Focus/ e-PTZ/ Event Management
Alarm Detection	Motion Detection: 5 x 5 zones, 5-level sensitivity or customized threshold Audio Detection: 5 level sensitivity or customized threshold Blur Detection: customized threshold External Input
Alarm Event	File upload via FTP, SMTP and SD Card Notification via email, HTTP and TCP External output activation Video and audio recording to SD Card
Image Orientation	Mirror, Flip
Bit Rate Mode	Primary stream bit rate control: CBR/VBR
Local Storage	
Memory Card	microSD/SDHC Card up to 32 GB
SD Card Overwrite	Yes
Store Category	Alarm / Motion / Schedule/ Un-interrupt recording
Power Supply	
Power Requirement	DC 12V ± 10% / PoE (IEEE 802.3af)
Power Connector	DC Jack (2.0mm)
Power Consumption(Max)	NCC800: 7W, NCC800WL: 7.5W
LED Indicator	x1 Power LED (Red)
Environment	
Operating Temperature	-10°C ~ 50°C (-14°F ~ 122 °F)
Operating Humidity	10~ 90% RH
Storage Temperature	-20°C ~ 60°C (-4°F ~ 140 °F)
Regulatory	CE, FCC (class B), RoHS
Network	
Ethernet	10/100Mbps; 10Base-T/100Base-TX Ethernet connection for LAN / WAN, RJ-45
Wireless	USB Wi-Fi Dongle (Optional); IEEE 802.11b/g/n
LED Indicator	x2 network LED(Green & Yellow)
Internet Protocol	IPv4, TCP/IP, UDP, HTTP, SMTP, DNS, DHCP, NTP, SSH, FTP, RTP, RTSP, ICMP, UPnP
Browser	IE browser 6.0 or above
I/O Connector	

Alarm Port	Terminal block x1 In / x1 Out
Audio In / Out	3.5mm Phone Jack 1 In / 1 out
Power	DC 12V
Video	Video out x1, 2-pin to BNC video out
LAN	RJ-45 x1, 10/100Mbps; 10Base-T/100Base-TX
USB	USB port x1, for connection to USB Wi-Fi dongle
Reset	Within 5 sec for rebooting system; more than 5 sec for loading default
Memory Card	microSD/SDHC card slot
Mechanism	
Dimensions(WxHxD) (without bracket)	76mm x 103mm x42mm (2.98"x4.06"x 1.66")
Weight	118g (Without Bracket) .
Package Contents	
Power Supply	DC 12V Power adaptor
Video Cable	2-Pin to BNC Video Out cable
Bracket	Wall mount, ceiling mount
Document	Quick Installation Guide
CD-ROM	User Manual, Quick Installation Guide, IP Finder Utility
Other	USB Wi-Fi Dongle (for NCC800WL)

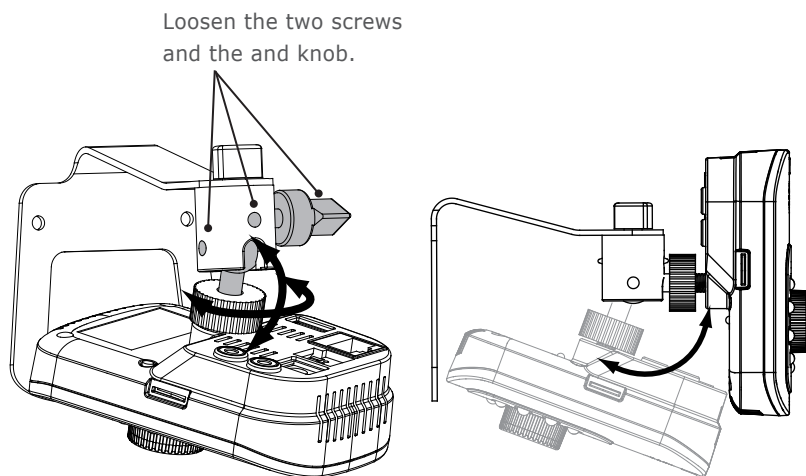
2. Camera Installation

2.1 Mounting the Camera

1. Drill three holes at the desired location and insert provided anchors into the holes. Then fasten the provided screws into the anchors to secure the camera to the wall.



2. To adjust the camera angle, use a torx key to loosen the two screws and loosen the knob. After adjustment is done, fasten the screws and the knob.



2.2 Connecting the Cables

1. Optionally connect alarm input/output devices to the camera.
2. Optionally connect a speaker and microphone to the camera.
3. Connect the camera to a power source, using one of these options:
 - **DC 12V:** Connect to the provided power adapter.
 - **PoE:** Using an Ethernet cable, connect the LAN port to a PoE-capable network device. Power will be supplied through the Ethernet cable.
4. Optionally connect a video monitor if you want to perform focus and iris adjustments during the installation.
5. For NCC800WL, connect the USB Wi-Fi dongle to the USB port of the camera for wireless capability.

2.3 Adjusting the Focus

Loosen the Focus Adjustment Ring screw first and then rotate the ring to adjust the focus. After adjustment, fasten the screw.

3. Network Connection and Configuration

3.1 Network Connection Types

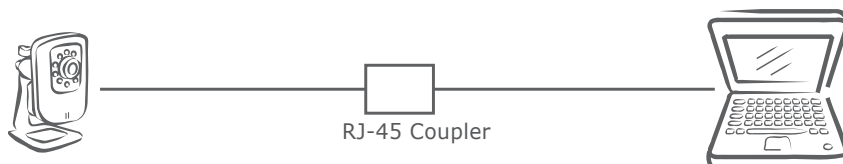
There are many different ways that you can connect the camera to your network, depending on your applications requirements. You should always set the camera's network settings according to your network configurations. The following diagrams depict some typical applications with guidelines on network settings. For more information on network settings, always consult with your network administrator or ISP as required.

Type 1: Direct Connection to a PC

Directly connect the camera to a PC using a standard Ethernet cable.



To extend the connection length, you should use a RJ-45 female/female coupler to connect two Ethernet cables together.



Note

The LAN port of the camera supports auto MDI/MDIX (Medium dependent interface crossover) so there is no need to use cross-over cable.

To access the camera, the PC must be on the same network as the camera. The default IP address of the camera is a static one (192.168.1.30). Configure your PC's IP address as 192.168.1. X (where X is a number between 2 to 254, excluding 30 and subnet mask as 255.255.255.0, and then your PC should be able to access the camera.

Type 2: Connecting Camera(s) to a Local Area Network (LAN)

To add the camera(s) to an existing LAN, just connect the camera(s) to the hub or switch on your network. If you want to provide the camera power via the Ethernet connection, a PoE-enabled hub/switch is required.

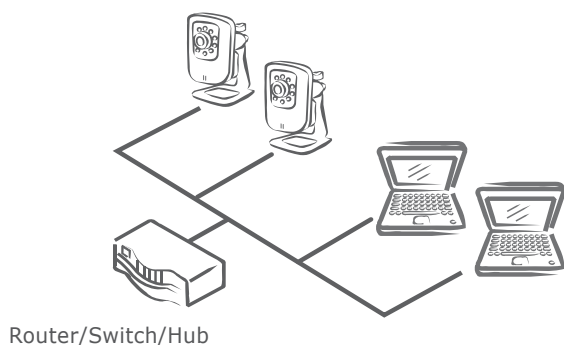


Note

The LAN port of the camera supports auto MDI/MDIX (Medium dependent interface crossover) so there is no need for an uplink port or the use of a cross-over cable.

Assign an IP address to your camera following your network IP allocation policy. You can manually specify the IP address or allocate the IP address automatically using a DHCP server, if available on your network.

Then, you can monitor and manage the camera via a web browser from a local PC.



Type 3: Connecting Camera(s) to a Wireless Network

If you connect an optional USB Wi-Fi dongle to the camera, then the camera can also connect to a wireless network in either of the following ways:

Ad-Hoc Mode

This is a peer-to-peer connection type where your camera directly connect to another wireless device. Each wireless devices on the network share the same SSID. To access the camera, the wireless node, e.g., your wireless PC, must meet these requirements:

- Must be on the same network as the camera. The default IP address of the camera is a static one (192.168.1.30). So you need to configure your wireless PC's IP address as 192.168.1. X (where X is a number between 2 to 254, excluding 30 and subnet mask as 255.255.255.0).
- Must use the same SSID and channel number as the camera.



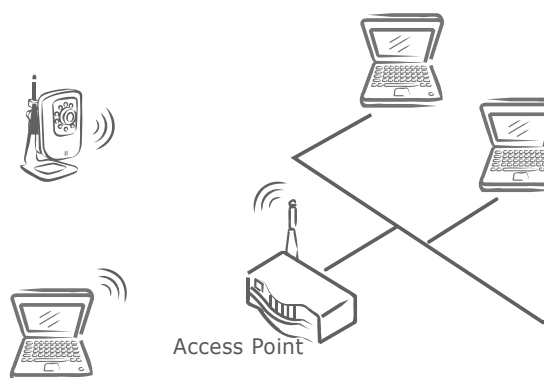
Infrastructure Mode

Using the Infrastructure network type, the camera will use an AP (Access Point) as an intermediary to link to the wireless network and the wired LAN. For wireless connectivity, all the wireless devices on the same wireless network must use the same SSID.

Typically the Access Point will also work as a router and has built-in DHCP function to assign a local IP address to your camera. You can alternatively assign a fixed IP address to the camera to prevent it from frequently changing.

Under the Infrastructure mode, you can access the camera in either of these ways:

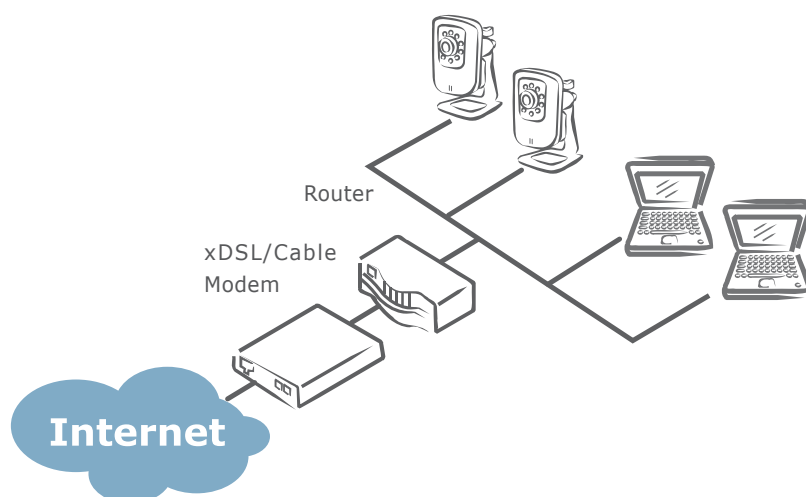
- From a wired PC: Any PC on the same network should be able to access the camera.
- From a wireless device: The wireless device must use the same SSID and channel number as the camera and must be on the same network as the camera.



Type 4: Remote Connection via the Internet

If the network where the camera resides is connected to the Internet, you can also provide remote access to your camera over the Internet.

Typically a broadband router has a built-in DHCP function to assign a local IP address to your camera. You can alternatively assign a fixed IP address to the camera to prevent it from frequently changing.



To access the camera from a local PC, simply use the local IP address of the camera.

To enable remote access, you must configure your router/firewall to forward an incoming request to that fixed local IP address of the camera. Therefore, when an external host sends a request to access your camera, the request will first reach the router's external IP address and then be forwarded to the local IP address of the camera.

3.2 Accessing the Camera for the First Time

The camera comes with a web-based setup utility, allowing you to view the video of the camera and configure the camera for optimal use in your environment.

To access the camera's web-based control utility, you need a PC that meets the following requirements:

- **Operating System:** Windows Vista® or XP
- **Browser:** Internet Explorer Version 6.0 or later
- **CPU:** Intel Pentium 4.2 GHz or higher
- **RAM:** 512 MB or more

Then take the following steps to connect your PC to the camera.

Step 1: Make the connection

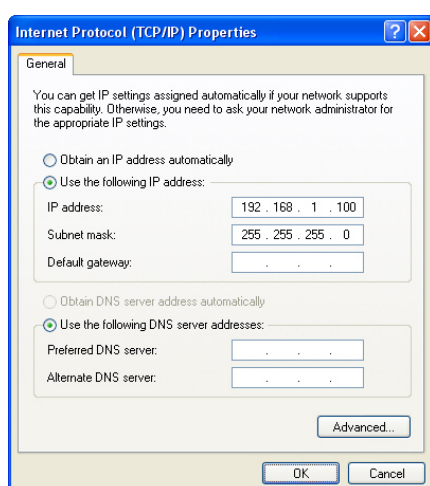
For initial setup purposes, connect one end of an Ethernet cable to the RJ45 connector of the camera and the other end to the LAN port on your PC.

Step 2: Configure your PC's IP address

The camera uses a default IP address of 192.168.1.30 and subnet mask of 255.255.255.0. To have your PC on the same network with the camera, configure your PC's IP settings as below:

- **IP address:** 192.168.1. X, where X is a number between 2 to 254, excluding 30.
- **Subnet mask:** 255.255.255.0.

Ignore all other settings and click **OK**.



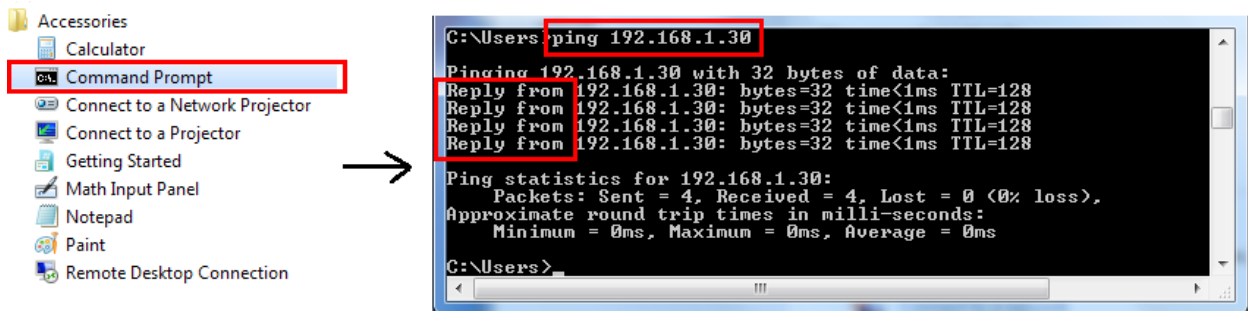
Step 3: Verify the connection between the PC and the IP Cam

6. Launch the Command Prompt by clicking the **Start** menu, **Programs**, **Accessories** and then **Command Prompt**.

3. Network Connection and Configuration

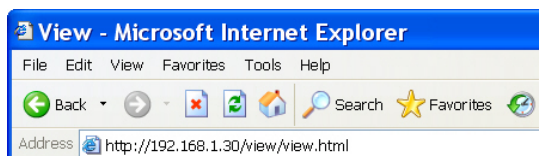
- At the prompt window, type `ping x.x.x.x`, where x.x.x.x is the IP address of the camera (the default is 192.168.1.30).

If the message of **"Reply from..."** appears, it means the connection is established.

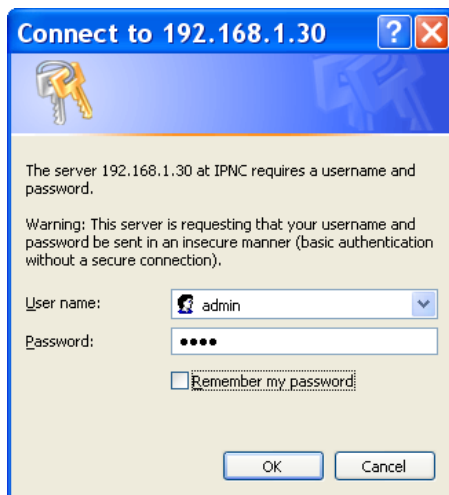


Step 4: Access the camera from IE browser

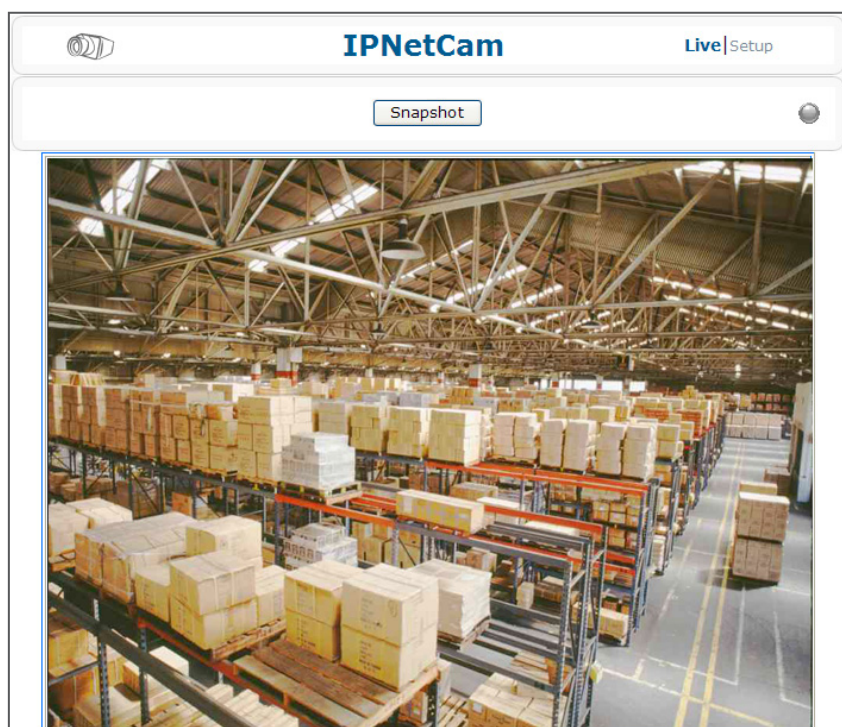
Open the IE browser and enter the IP address of the camera in the URL field. The default is 192.168.1.30.



When prompted to login, enter the user name and the password. (The defaults: admin, 1234). Note that the password is case-sensitive.



Upon successful login, you will see the live view screen shown as the example below:



3.3 Using “IP Finder” to Manage Cameras

IP Finder is a management tool included on the product CD. It is designed to manage your network cameras on the LAN. It can help find multiple network cameras, set IP addresses, show connection status and manage firmware upgrades.

3.3.1 Installing IP Finder

Before proceeding, make sure your operating system is Windows Vista or Windows XP.

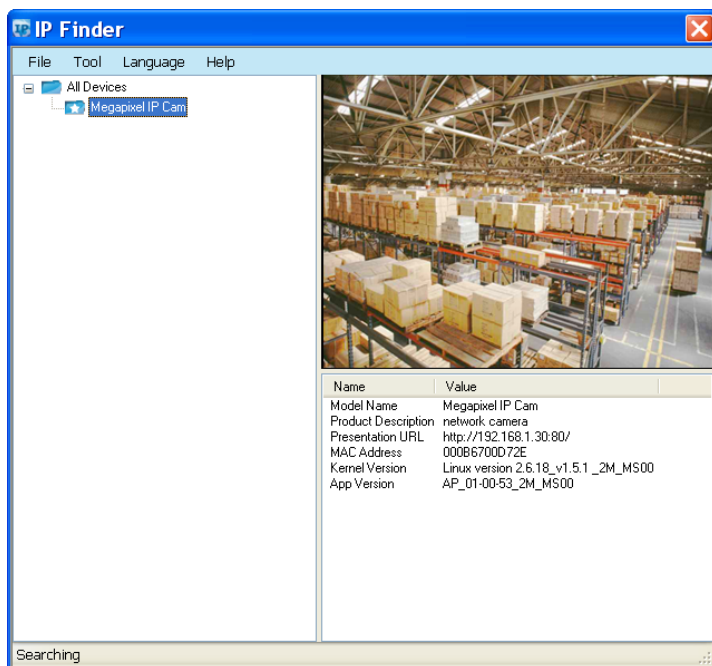
To install the software, simply locate and double-click the **IP Finder** setup file on the provided CD. Then follow the on-screen prompts to proceed.

3.3.2 Using IP Finder

To launch IP Finder, double-click the **IP Finder** shortcut on the desktop or click **Start > Programs > IP Finder > IP Finder**.

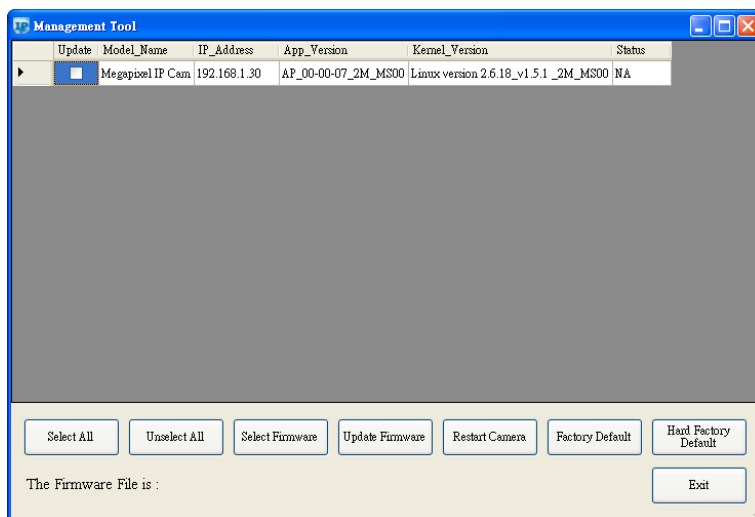
After you launch **IP Finder**, it will search for all the available cameras on the same network. Click the plus sign next to “**All Devices**” to expand the menu and display all the found cameras.

Clicking a target camera will show the live view (if available) and the detailed information of the camera, including the MAC address. Each camera comes with a unique MAC address, which is indicated on the product label. It helps identify which camera is currently accessed, particularly when multiple cameras are connected on your network.



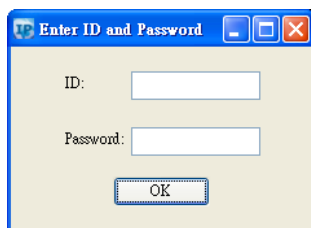
The **Tool** menu of the **IP Finder** allows you to perform these tasks:

- **Search Network:** This option allows you to search the cameras on the network.
- **Set Master ID and Password:** Allows you to set a master ID and password for managing the cameras with IP Finder.
- **Management Tool:** Allows you to restart the camera, update firmware, reset all of the camera settings to default (except network settings) and reset all of the camera parameters to default.



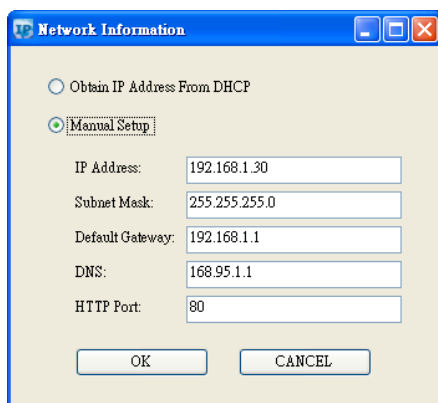
For an individual camera, right-click the camera and a menu will provide these options:

- **Go to Presentation URL:** Launch IE browser to access the web-based utility of the camera.
- **Set Device ID and Password:** Set the login ID and password for managing the camera with IP Finder.



A dialog box titled "Enter ID and Password" with a blue title bar and standard window controls. It contains two text input fields: "ID:" and "Password:". Below the fields is an "OK" button.

- **Network Information:** Allows you to configure the camera's network settings.



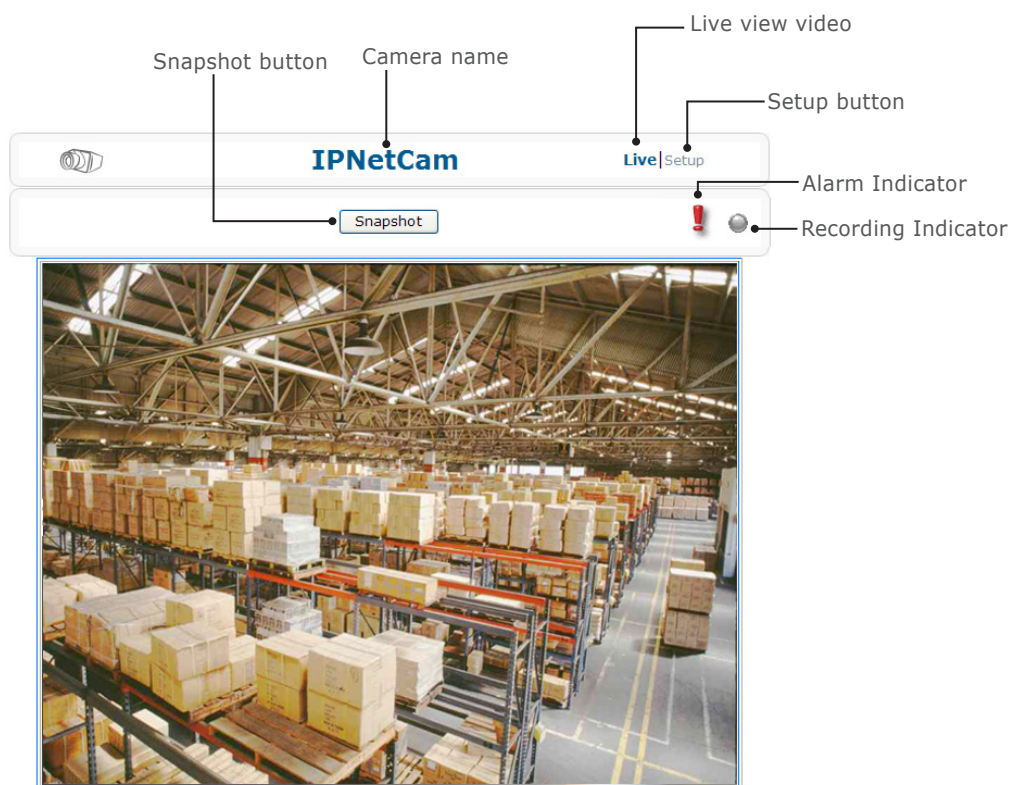
A dialog box titled "Network Information" with a blue title bar and standard window controls. It features two radio buttons: "Obtain IP Address From DHCP" (unselected) and "Manual Setup" (selected). Below the radio buttons are five text input fields: "IP Address:" (192.168.1.30), "Subnet Mask:" (255.255.255.0), "Default Gateway:" (192.168.1.1), "DNS:" (168.95.1.1), and "HTTP Port:" (80). At the bottom are "OK" and "CANCEL" buttons.

4. Using Web-based Control Utility

4.1 Overview

4.1.1 Main Screen

After you login to the camera's web-based control utility, you will first see the live view screen of the camera. The screen is like the picture below:



The live view screen of the utility provides these options:

- **Snapshot:** Pressing this button takes a snapshot of the current live view screen.
- **Live:** Pressing this button displays the live view of the camera.
- **Setup:** Pressing this button allows you to access the setup page.
- **Camera name:** Displays the name of the camera.
- **Recording Indicator:** Turns red when the recording is proceeding.
- **Alarm Indicator:** Appears when an alarm is triggered.
- **Live view video:** Shows the live view of the camera.

Note that the accessibility to the options varies according to the login account.

- **Viewer:** Allowed to view only the live view screen. Access to other options is restricted.
- **Administrator:** Can access all the options on the live view page and make configurations on the setup pages.

4.1.2 Setup Menu

The **Setup** options are categorized into five groups: **Image**, **Network**, **System**, **Event** and **Recording**. Clicking the name will expand its sub-menu. See the ensuing sections for more information.

4.1.3 Applying Settings

Each configuration page provides a **Save** button. Settings are applied right after you press the **Save** button. And the browser will refresh to load the latest setting or otherwise pop up the "**Save OK**" message to indicate that settings have been applied.

4.2 Image Settings

4.2.1 Codec

The Codec page allows you to configure the video streams for the camera. You can optionally configure a secondary or third stream to a resolution as required by your third-party device or software.

Basic Settings	
Camera Name:	IPNetCam
Primary Stream:	Codec: H264 Resolution: 1080P (1920x1080) Bit Rate: 8000 kbps (500~8000) Frame Rate: 30 FPS I-frame Interval: 1 S
Secondary Stream:	Codec: OFF Resolution: ... Bit Rate: 4000 Kbps (500~4000) Frame Rate: 30 FPS I-frame Interval: 1 S
Third Stream:	Codec: MJPEG Resolution: VGA (640x480)
Mirror:	OFF
Rate Control:	VBR
TV Out Stream:	ON
<input type="button" value="Save"/>	

Camera Name Settings

- Enter a descriptive name of the camera. Note that if you want to make the camera ONVIF compliant (see **Network > ONVIF**), no space is allowed in the camera name.

Stream Settings

Stream setting options vary according to the codec. Selectable codec for each streaming also depends on the codec of the other two streams as described in the table below:

Streaming Combination					
Primary		Secondary		Third	
Codec	Resolution	Codec	Resolution	Codec	Resolution
MJPEG	1080P	OFF	N/A	OFF	N/A
		H264 MPEG4	D1 VGA 2CIF CIF		
	SXVGA 720P XGA SVGA D1	OFF	N/A	OFF	N/A
				MJPEG	VGA CIF
		H264 MPEG4	D1 VGA 2CIF CIF	OFF	N/A
				MJPEG	VGA CIF
H264 MPEG4	1080P	OFF	N/A	OFF	N/A
				MJPEG	VGA CIF
	SXVGA 720P XGA SVGA D1	OFF	N/A	OFF	N/A
				MJPEG	VGA CIF
		H264 MPEG4	D1 VGA 2CIF CIF	OFF	N/A
				MJPEG	VGA CIF

H.264 Codec Settings

- **Resolution:** Choose a resolution for the video. Choices include 1080p, SXVGA, 720p, XGA, SVGA, D1, VGA, 2CIF and CIF, depending on the codec of the other two streams.
- **Bit Rate:** According to your bandwidth, specify a value for data transmission rate (kbps). Higher value gets higher video quality but consumes more bandwidth.
- **Frame Rate:** Choose the intended frame rate, i.e., the number of frames to transmit per second.
- **I-Frame Interval:** This setting allows you to specify the intervals between I-Frames (Intra Frame) to optimize your bandwidth and storage space consumption. An I-Frame is the first image in a video sequence and it contains entire image information. Frames that follow I-Frame, P-Frames, carry only the necessary changes as compared to I-Frame, so they are smaller in file size. When intervals between I-Frames are longer, the less I-Frames are needed and thus consuming less bandwidth and storage space. Recommended settings are as below:
 - Longer I-Frame interval: For normal scenes where there is less motion and sufficient lighting.
 - Shorter I-Frame interval: For scenes with lots of motion, or under poor lighting conditions.

MPEG4 Codec Setting

- **Resolution:** Choose a resolution for the video. Choices include 1080p, SXVGA, 720p, XGA, SVGA, D1, VGA, 2CIF and CIF, depending on the codec of the other two streams.
- **Bit Rate:** According to your bandwidth, specify a value for data transmission rate (kbps). Higher value gets higher video quality but consumes more bandwidth.
- **Frame Rate:** Choose the intended frame rate, i.e., the number of frames to transmit per second.
- **I-Frame Interval:** This setting allows you to specify the intervals between I-Frames (Intra Frame). An I-Frame is the first image in a video sequence and it contains entire image information. Frames that follow I-Frame carry only the necessary changes as compared to I-Frame and thus reducing the amount of data needed to transmit the video. Generally when intervals between I-Frames are longer, the less I-Frames are needed and thus consuming less bandwidth, but the video quality is lower.

MJPEG Codec Settings

- **Resolution:** Choose a resolution for the video. Choices include 1080p, SXVGA, 720p, XGA, SVGA, D1, VGA, 2CIF and CIF, depending on the codec of the other two streams.
- **Quality:** Set the image's quality as High, Normal or Low.
- **Frame Rate:** Choose the intended frame rate, i.e., the number of frames to transmit per second.



Note

1. Live View uses the MJPEG codec. If no streaming is using MJPEG, it will result in no video for Live View.

Codec

No JPEG Codec! Please choose a suitable codec mode on Setup->Image->Codec page.

2. If MJPEG is selected for both the primary stream and the third stream, Live View will always display video using the third stream codec settings.

Mirror Settings

This option allows you to mirror or flip the video image if required.

- **OFF:** Turns off this function.
- **HORIZONTAL:** Flips the images horizontally.
- **VERTICAL:** Flips the images vertically.
- **BOTH:** Flips the images vertically and horizontally.

Rate Control

Choose a bit rate control to manage your bandwidth usage.

- **Variable Bit Rate (VBR):** VBR keeps the video stream quality as constant as possible by varying bit rate. This mode ensures high quality image for motion scene and is often selected when image quality demands priority. However, this mode requires more bandwidth in order to vary the bit rate.
- **Constant Bit Rate (CBR):** CBR maintains a specific and constant bit rate by varying the stream quality. With CBR, streaming is smooth and network throughput is stable for any scene. This mode is typically used with a limited bandwidth environment.

TV Output Stream

Turn on this option if you connect an analog monitor to the camera's **Video** connector for video output.

4.2.2 Exposure

The **Exposure** page allows you to configure the **Exposure Mode** and **Backlight Compensation** settings according to the light conditions of the camera.

Exposure Mode

The screenshot shows the 'Exposure Mode' configuration window. It has two main sections: 'Auto Exposure' and 'Manual Exposure'. The 'Auto Exposure' section is active, indicated by a selected radio button. It contains several settings, each with a label and a dropdown menu: 'Method' is set to 'Center weighted', 'EV' is set to '0', 'Max Exposure' is set to '1/3.125', 'Min Exposure' is set to 'Unlimited', 'Sensitivity' is set to '10', and 'Max. Gain' is set to 'Default'. The 'Manual Exposure' section is inactive. It contains 'Exposure Time' set to '1/30.00 Sec' with a range '(1/3.75~1/10000)' and 'Gain' set to '0'.

Auto Exposure Settings

- **Method:** Select which area of the image will be used to measure the amount of light to achieve best exposure.
 - **Center Weighted:** Exposure metering is averaged over the entire frame but emphasis is placed on the central area.
 - **Object Targeted:** This option meters the exposure based on the targets you specify. When this option is selected, define your target by clicking squares displayed on the image and then press **Save Spot Window** to save the setting.
- **EV:** In a scene with predominantly light or dark areas, the image will be underexposed or overexposed, causing an image to be too dark or bright. In such situations, you can adjust a compensation value to optimize the exposure. Decrease the value if images appear too light (overexposed). Increase the value if images are too dark (underexposed).
- **Max/Min. Exp:** Select the maximum / minimum exposure time according to the light source. The selectable value will change according to the frequency setting under **Image > Basic Settings**.
- **Sensitivity:** Select how sensitive the camera reacts to the light. A higher value enables the camera to be more sensitive to the light conditions and adjust the exposure in the shortest time interval.
- **Max Gain:** Specify the maximum amount of amplification applied to the image. A high level of gain allows images to be viewable in very low light, but will increase the image noise.

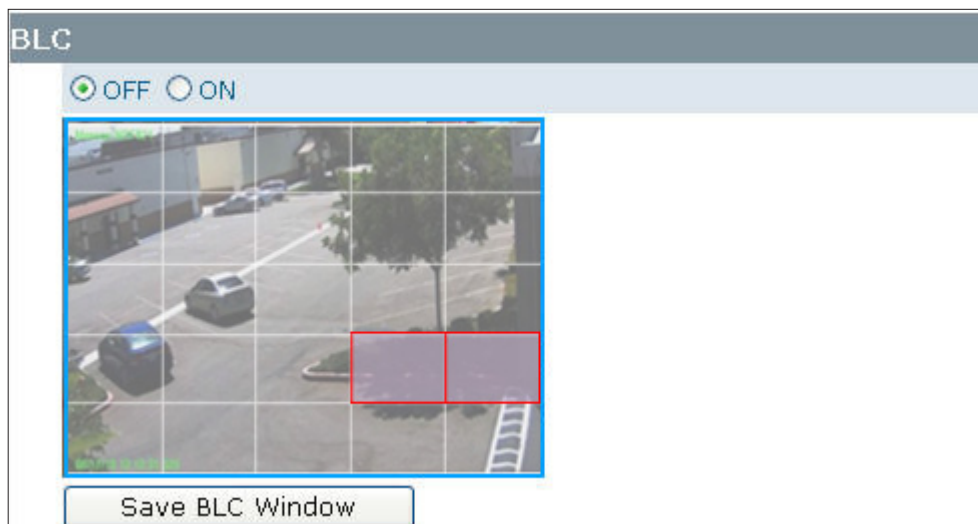
Manual Exposure Settings

- **Exposure Time:** Enter a desired exposure time.

- **Gain:** Select a gain value from 0 to 16. A high level of gain allows images to be viewable in very low light, but will increase image noise.

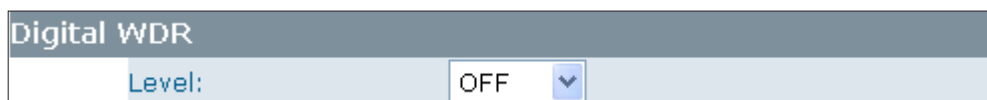
BLC (Backlight Compensation)

The **Backlight Compensation** function allows you to provide the optimal exposure of subjects under back light circumstances.



- **OFF/ON:** Choose to enable or disable the BLC function.
- **BLC area setting:** BLC area refers to the dark area where more details are expected. Define your BLC area by clicking squares displayed on the screen and then press Save BLC Window to save the setting.

Digital Wide Dynamic Range




When there are both very bright and very dark areas simultaneously in the field of view, you can enable Digital Wide Dynamic Range (WDR) function. It optimizes an image to ensure that dark areas are more visible while retaining details in bright areas.

- **Level:** Depending on the contrast/dynamic range of a scene, you can select different level of WDR. Higher level of WDR suits for higher contrast/dynamic scene. If you select **Auto** mode, the camera will automatically adjust the WDR level by itself depending on the light of the scene.

4.2.3 White Balance

White Balance



White Balance Mode

☒ Auto White Balance

Sensitivity

☐ Manual White Balance

R Gain

 (0.4~4.0)

G Gain

 (0.4~4.0)

B Gain

 (0.4~4.0)


Select a white balance mode according to external light condition for the best color temperature.

- **Auto White Balance:** Use this option when there is no special lighting in the environment. The camera will automatically adjust the color temperature according to the light conditions and the sensitivity you specify. The higher the sensitivity, the faster the adjustment. If the lighting conditions change frequently, select a lower sensitivity to prevent the camera from frequently changing white balance.
- **Manual White Balance:** With any special light in the environment, you can use this option to manually adjust the red, green and blue channels, which are mostly affected by the special light. For example, if red color is too bright, then you should lower the R Gain value.

4.2.4 Basic Setting

The **Basic Setting** allows you to specify a frequency and adjust the basic image settings to optimize your video image.

Basic Settings



Basic Setting

Frequency	<input checked="" type="radio"/> 50 Hz <input type="radio"/> 60Hz
TV System	<input type="radio"/> NTSC <input checked="" type="radio"/> PAL
Brightness	< 128 > (0-255)
Contrast	< 128 > (0-255)
Saturation	< 128 > (0-255)
Sharpness	< 128 > (0-255)

Default All Image Parameters.

Save

- **Frequency:** Select an appropriate frequency to reduce the flicker on the image. "50 Hz" and "60 Hz" are provided. Frequencies settings will affect the **Max. Exposure** and **Min. Exposure** settings under **Image > Exposure**.
- **TV System:** Displays the current video standard: NTSC or PAL. This setting cannot be changed via web interface.
- **Brightness:** Adjust the image brightness level.
- **Contrast:** Adjust the image contrast level.
- **Saturation:** Adjust the image saturation level.
- **Sharpness:** Adjust the image sharpness level.
- **Default All Image parameters:** Pressing this button will restore all the image settings to the defaults.

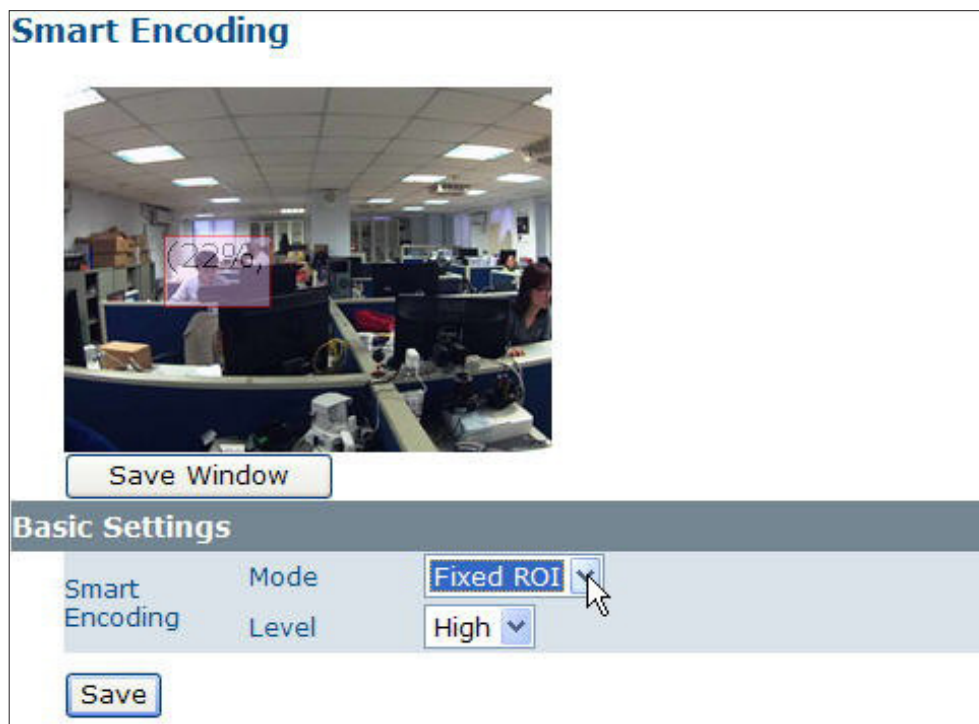
4.2.5 Smart Encoding

On the **Smart Encoding** page you can specify a specific region of the video as more important, i.e., a region of interest (ROI). When a ROI is specified, the camera will assign a higher number of bits to the ROI area to deliver better video quality than non-ROI areas.



Note

The Smart Encoding function is only available when H.264 is selected for one of the streams.



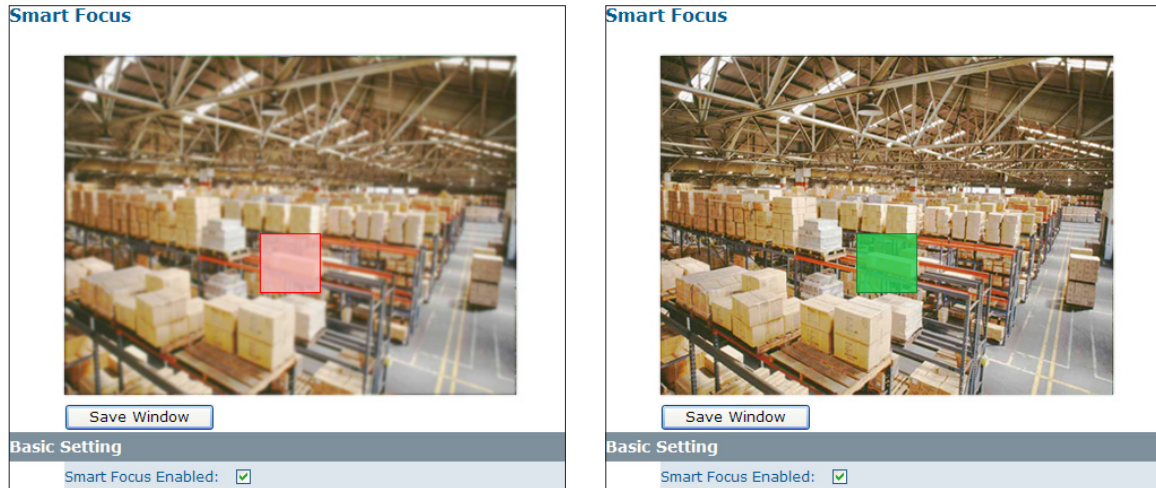
Basic Setting

To define a smart encoding area, click and drag your mouse on the image to define the region of interest and click **Save Window** to save the region. Click anywhere on the image to cancel the current defined area.

- **Mode:** Select **Fixed ROI** to enable smart encoding function.
- **Priority:** Select a priority level for the ROI.

4.2.6 Smart Focus

In addition to observing the live view image to see if focus is achieved, you can also enable **Smart Focus** to help you verify if focus is locked. If this function is enabled, whenever focus is achieved, the focus window turns green.



Basic Settings

To focus on a desired subject using the Smart Focus function:

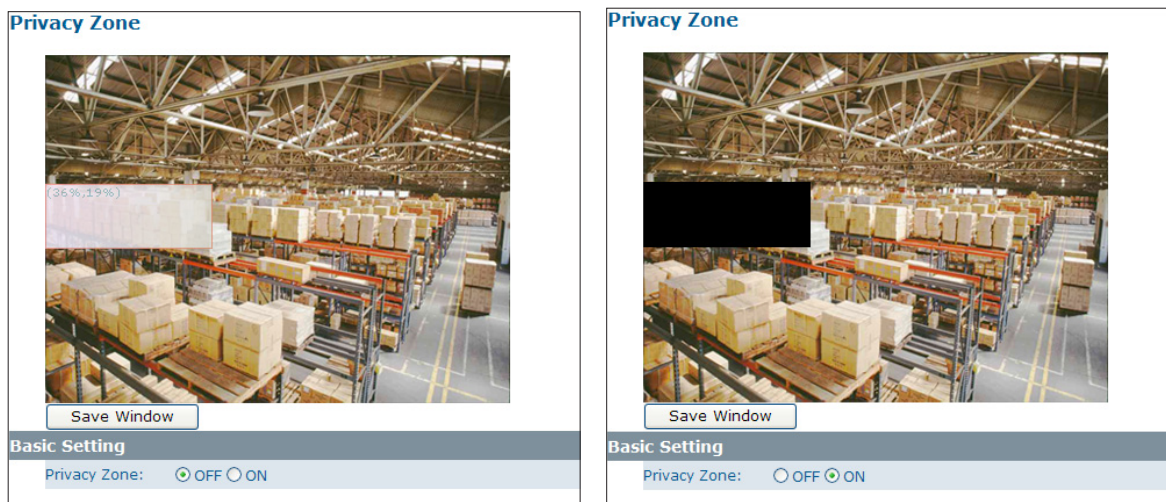
1. Click on the subject that you want to focus on and then click **Save Window**.
2. Check the **Smart Focus Enabled** box. This will turn the smart focus indicator to red.
3. Use the focal length and focus controls to optimize the focus. When focus is achieved, the indicator turns green.

4.2.7 Privacy Zone

Privacy Zone allows you to mask sensitive areas of the image for privacy protection. If enabled, it will mask the live view and the recorded video clips/JPEG files.

To turn on the privacy zone function:

4. Click and drag your mouse on the image to define the region to be masked and then click **Save Window**.
5. Select **ON** to enable **Privacy Zone**. This will turn the masked area to black.



4.2.8 ePTZ

Using the ePTZ function, you can use the pan, tilt and zoom controls to steer the camera to a desired position and focus on desired close-up areas, without moving the camera physically.

To use the ePTZ function:

1. On the **Image > Codec** page, make sure the first streams is active and **TV Out Stream** is turned off on **Image > Codec** page.
2. On the main screen, a **PTZ** button will appear. After you click the **ePTZ** button, an ePTZ control panel will appear where you can click the corresponding indicators to perform desired operations:
 - **To zoom in/out:** Click the +/- indicator repeatedly to zoom in/out the live view image.
 - **To pan left/right:** Click the left/right indicator to pan the viewing area. The pan function does not work if the video is not zoomed-in (no zoom status).
 - **To tilt up/down:** Click the up/down indicator to tilt the viewing area. The tilt function does not work if the video is not zoomed-in (no zoom status).
 - **To preset to home:** Click the home indicator and the image will return to the original view.



4.3 Network

4.3.1 Basic

Basic

Basic Setting

<input type="checkbox"/> DHCP	
IP Address:	<input type="text" value="192.168.1.30"/>
Subnet Mask:	<input type="text" value="255.255.255.0"/>
Default Gateway:	<input type="text" value="192.168.1.1"/>
DNS:	<input type="text" value="168.95.1.1"/>
HTTP Port:	<input type="text" value="80"/> [80, 1025~65535]
MAC:	<input type="text" value="00:0b:67:00:d9:e5"/>

- **DHCP:** If there is a DHCP server on the network and you enable this option, the server will automatically assign an IP address and related information to the camera.



Note

If there is no DHCP server on your network or you prefer to manually assign an IP address to the camera, leave the DHCP checkbox blank.

- **IP Address & Subnet Mask:** If the DHCP function is not enabled, you have to assign an IP address with the subnet mask to the camera.
- **Default Gateway:** Enter the IP address of the gateway if required. Please contact your network administrator whether you need to set up the gateway.
- **DNS:** Enter the IP address of a DNS server. If you enter a domain name instead of an IP address in server-related fields, e.g., FTP, SMTP or NTP server, then the camera will need a DNS server to translate domain names into an IP address that is actually used for communication on the Internet.
- **HTTP Port:** Use the standard HTTP port number 80 or alternatively specify another port number between 1025 and 65535.

If you choose to use a non-standard port, and the camera on the LAN is to be accessible from the Internet, then you must configure your router/firewall to forward incoming HTTP request to that specified port (via NAT/port forwarding settings).

- **MAC:** Display the MAC address of the camera. Each camera comes with a unique MAC address, which is indicated on the product label. It helps you to identify which camera is currently accessed, particularly when multiple cameras are connected to your network.

4.3.2 WLAN

If the camera is inserted with a USB Wi-Fi dongle, then a WLAN page will appear for you to configure wireless settings.

Basic Settings

WLAN	
Basic Setting	
Site Survey:	<div> <div>=== SSID LIST ===</div> <div>▼</div> <div>Scan</div> </div>
SSID:	<div> <input type="text"/> <div>(Length: 1~32)</div> </div>
Network Type:	<div> <div>Infrastructure</div> <div>▼</div> </div>
Channel:	<div> <div>auto</div> <div>▼</div> </div>
Authentication:	<div> <div>WPA2-Personal</div> <div>▼</div> </div>
Encryption:	<div> <div>AES</div> <div>▼</div> </div>
Shared Key:	<div> <input type="text"/> <div>(Length: 8~63)</div> </div>
<div>Save</div>	

- **Site Survey:** Clicking the **Scan** button allows you to search for wireless networks available in the air. After scanning, available wireless networks will appear in the drop-down list. You can select one from the list to see related Access Point (AP) information, including signal strength, BSSID (the MAC address of the wireless interface) and wireless mode.

4. Using Web-based Control Utility

If you select a wireless network from the **Site Survey** list, then required fields will appear and some fields will be filled automatically. If you don't want to use the sites scanned by the camera, then you need to manually enter the following required information.

- **SSID:** Enter the name of the wireless network your camera is going to connect to.
- **Network Type:** Specify the network type of the wireless network the camera is to connect to. Usually **"Infrastructure"** is used if you want to connect to a network through an intermediary Access Point. If you want to directly connect to another wireless device, then choose **"Ad-hoc"** mode.
- **Channel:** If your wireless network type is **"Infrastructure"**, then simply select **"Auto"**. If your wireless network type is **"Ad-hoc"**, then you must select the channel used by the wireless devices. All the wireless devices in an Ad-hoc network must use the same channel for wireless communication.
- **Authentication:** Select the authentication used by your wireless network. Options include **Open**, **Shared**, **WPA-Personal** and **WPA2-Personal**.
- **Encryption:** Select an encryption method used by the wireless network your camera is going to connect to. Available options, **WEP**, **AES** or **TKIP**, depend on the authentication type.

Authentication	Encryption	Key
Open	None	NONE
	WEP	WEP keys
Shared	WEP	WEP keys
WPA-Personal	TKIP, AES	Shared key
WPA2-Personal	AES	Shared key

- **WEP key:** If you use **WEP** as the encryption method, select characters or hexadecimal digits as the key format and then enter up to four keys. When using hexadecimal format, only digits 0-9 and letters a-f, A-F are allowed. Make sure the WEP keys match the required key format and length as below:

Key	Characters	Hexadecimal digits
64-Bit	5 alphanumeric characters	10 hexadecimal digits
128-Bit	13 alphanumeric characters	26 hexadecimal digits



Note

When setting WEP keys for data encryption, make sure to use the same encryption key values in identical order as used by the target wireless network.

- **Shared key:** If you use **AES** or **TKIP** as the encryption method, enter the shared key used by your target wireless network.

Advanced Settings

WLAN
Advanced Setting
Wireless Mode: bgn-mixed ▼
Bandwidth: Auto 20/40 MHz ▼
Save

- **Wireless Mode:** Select an appropriate wireless mode according to the modes of the Access Points in your network. Upon your selection, only Access Points that meet the selected specifications will be scanned when using **Site Survey** function. For example, if you select **bg-mixed**, only 802.11b and 802.11g Access Points will be scanned.
- **Bandwidth:** Select **20 MHz** or **Auto 20/40 MHz** according to your requirement. In addition to legacy channel bandwidth of 20 MHz, the 802.11n specification also allows the use of a 40-MHz wide channel. Using 40-MHz bandwidth may achieve higher data rates but also leads to fewer channels available.

4.3.3 FTP

To allow the camera to upload recorded video clips/JPEG files to an FTP server, you have to specify an FTP server and configure related settings.

FTP	
Basic Setting	
FTP Server IP:	<input type="text" value="192.168.1.1"/>
FTP Server Port:	<input type="text" value="21"/> [20,21,1024~ 65535]
User Name:	<input type="text"/>
Password:	<input type="password"/>
File Upload Path:	<input type="text" value="default_folder"/>
<input type="button" value="Save"/>	

- **FTP Server IP:** Enter the IP address of the FTP server.
- **FTP Server Port:** Enter the port number of the FTP server.
- **User Name:** Enter the user name to logon to the FTP server.
- **Password:** Enter the password to logon to the FTP server.
- **File Upload Path:** Specify the folder which has been created under FTP server root directory.

4.3.4 SMTP

To enable the camera to send you email notifications when an alarm is triggered, you need to specify an SMTP server to send the emails.

- **My Server Requires Authorization:** If your SMTP server requires authorization to send emails, enable this option.
- **SMTP Server IP:** Enter the IP address of the SMTP server.
- **User Name:** Enter the user name to log on to the SMTP server.
- **Password:** Enter the password to log on to the SMTP server.
- **Sender:** Enter the email address to be shown as the sender of the notification email.
- **Receiver:** Enter the email address to which the notification email is sent.

4.3.5 NTP

If you want the camera to synchronize its time clock with an NTP (Network Time Protocol) sever, configure the NTP server settings here.

- **NTP Server:** Enter the IP address or the domain name of the NTP server to synchronize with.
- **Time Zone:** Select a time zone in which the camera is located.
- **DST - Automatically Adjust for Daylight Saving Time Changes:** Check to apply the daylight saving time automatically if the camera is used in an area that is affected by DST. Then specify the month,

week, weekday and time from the **START** and **END** drop-down lists. The camera will adjust the clock automatically according to your DST settings.

Note that if the DST date in your area is different each year, then you need to change the start and end times each year, otherwise you need only change the settings once.

4.3.6 RTSP

RTSP is a standard for connecting a client to establish and control streaming data over the web. If you want to allow third-party devices or software to access video/audio streams from the IP camera over the network, you must configure the RTSP ports. You can provide up to 6 streams according to the specific codec mode with different RTSP port.

RTSP
RTSP Port Setting

Stream 1:	<input type="text" value="8555"/>	MJPEG/Primary
Stream 2:	<input type="text" value="554"/>	MPEG4/Primary
Stream 3:	<input type="text" value="8554"/>	MPEG4/Secondary
Stream 4:	<input type="text" value="8558"/>	MJPEG/Third
Stream 5:	<input type="text" value="8556"/>	H.264/Secondary
Stream 6:	<input type="text" value="8557"/>	H.264/Primary

Value must be :554~65535

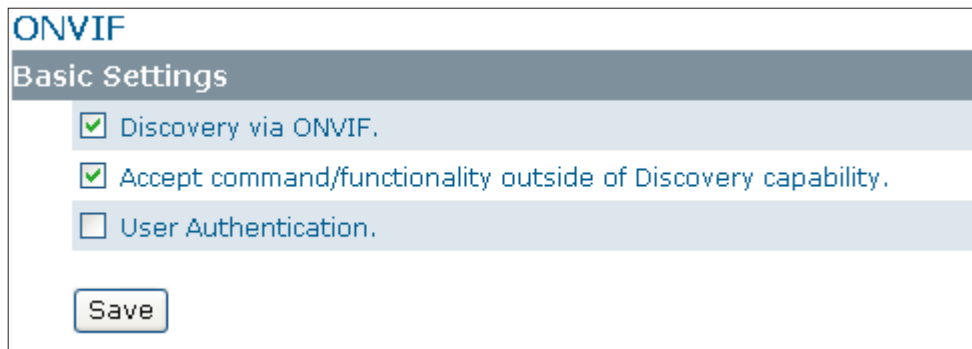
To use an RTSP player to access the camera's streams, you have to use correct the RTSP URL to request the streams. Refer to the table below for RTSP URLs:

Stream	URL
MJPEG Primary	rtsp://192.168.1.30:8555/mjpeg
MJPEG Third	rtsp://192.168.1.30:8558/mjpeg
H.264 Primary	rtsp://192.168.1.30:8557/h264
H.264 Secondary	rtsp://192.168.1.30:8556/h264
MPEG4 Primary	rtsp://192.168.1.30:554/mpeg4
MPEG4 Secondary	rtsp://192.168.1.30:8554/mpeg4

*Replace the IP address and the port number with the camera's settings if otherwise configured.

4.3.7 ONVIF

ONVIF is a standard that ensures interoperability between IP-based physical security products regardless of the manufacturers. This camera is ONVIF compliant and you can configure whether the camera can be found by other ONVIF compliant products and the related settings.



The screenshot shows a web interface for ONVIF settings. At the top, the word "ONVIF" is displayed in blue. Below it, a dark grey header bar contains the text "Basic Settings" in white. The main content area has a light blue background and contains three settings, each with a checkbox and a label: "Discovery via ONVIF." (checked), "Accept command/functionality outside of Discovery capability." (checked), and "User Authentication." (unchecked). At the bottom left of the settings area is a "Save" button.

Basic Settings

- **Discovery via ONVIF:** Check the box if you want the camera to be found by other ONVIF compliant devices in a network, e.g., an ONVIF compliant NVR.
- **Accept command/functionality outside of Discovery capability:** If checked, the camera is allowed to accept commands from ONVIF compliant device thus changing the camera's functionality.
- **User Authentication:** If an ONVIF compliant device needs authentication for communication, enable this option.

4.4 System

4.4.1 Date and Time

Date & Time

Current Time

Date: 2011-3-10 Time: 08:57:49

New Time

☐ Set Manually

Date: 2011-3-23 Time: 21:4:9

☐ Synchronize with Computer Timer

Date: 2011-3-23 Time: 21:05:28

☐ Synchronize with NTP Server

NTP Server: tw.pool.ntp.org

Time Zone: GMT+08 Taipei, Beijing, Hong Kong

Date Format: YYYY/MM/DD ▼

Save

Current Time

Displays the current date and time of the camera. Date and time will be updated after you configure new settings in the **New Time** section and click **Save** to apply the settings.

New Time

You can set the camera time by one of the following methods:

- **Set Manually:** Manually enter the camera's date and time settings in the given fields.
- **Synchronize with Computer Timer:** Use this option to synchronize the camera's date and time with the computer timer.
- **Synchronize with NTP Server:** Use this option to synchronize the camera's date and time with an NTP (Network Time Protocol) server, which can be configured under **Network > NTP**.
- **Date Format:** Allows you to specify a desired date format.

4.4.2 Time Stamp

The **Time Stamp** function allows you to overlay the date and time stamp on the video. When enabled, the recorded video will be displayed with the date and the time.

Time Stamp

☐ Enable Date and Time Stamp

Date Format: YYYY/MM/DD

Save

- **Enable Date and Time Stamp:** Check this box to enable the date and time stamp on images/video clips; to disable this function, uncheck the box.
- **Date Format:** Select the desired date format for the time stamp.

4.4.3 Firmware

Firmware

Current Version Description

Kernel Version: Linux version 2.6.18_v1.5.1_2M_MS03

App Version: AP_01-00-58_2M_MS03

Specify the Firmware to Update:

Browse...

Update

Note: Do not disconnect the power of the device, during the update.

!!Restart Camera will cause disconnect.

!!Reset all of the camera parameters to default except Network..

!!Reset all of the camera parameters to default.

Restart Camera

Factory Default

Hard Factory Default

Current Version Description: Displays the current version of the firmware.

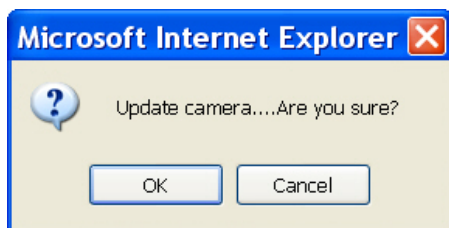
Specify the Firmware to Update: This function is designed to update the firmware of the camera. To perform the firmware upgrade, follow these parameters:

- Keep the network connected during the update process.
- DO NOT turn off or restart the camera during the firmware update process.

To update the firmware:

1. Click the **Browse** button to locate the firmware file.
2. Click the **Update** button to start update.

3. When prompted, click **OK** to proceed.



4. Wait about 20~60 seconds until the file is successfully updated. Once the update is completed, the browser will show a message reads "Firmware update successful". Then it will take 60 seconds to restart the camera.

Firmware update successful.

Camera is rebooting, please wait...

5. The utility will automatically go back to live view screen after firmware has been updated successfully.

You can also perform these tasks on the **Firmware** page:

- **Restart camera:** Restart the camera. This will cause all streams to disconnect.
- **Factory Default:** Reset all of the camera settings to the defaults, except network settings. After you confirm to reset, the camera will reset and restart automatically. When complete, you will return to the live view page.
- **Hardware Factory Default:** Reset all of the camera parameters to the defaults, including the network settings.

4.4.4 User Management

The **User Management** page allows you to manage user accounts and access privileges.

User Management

User List

admin: [Admin]

Delete User

Add/Modify User

User Name:

Password:

Confirm:

Authority: ☐ Admin ☒ Viewer

User Add

User List

Displays the list of current user accounts of the camera. To delete a user account, select the unwanted user account from the list and then click **Delete User**.

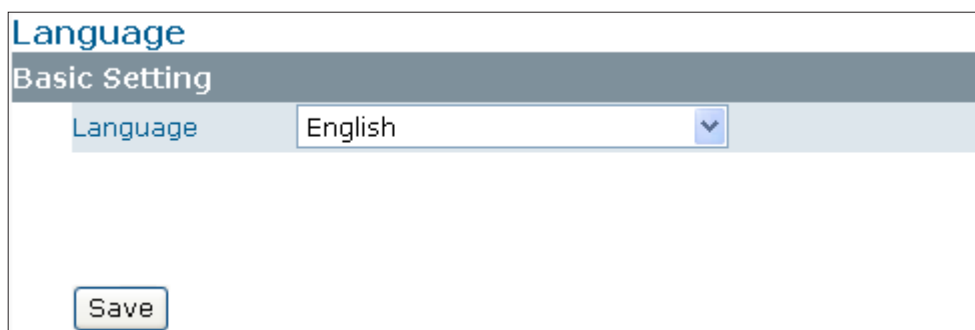
Add/Modify User

You can add a new user or modify current user's account or authority.

- To add a new user, enter the user name and password and specify the authority. Then click **User Add** to add a user.
- To modify the password of the existing user, enter the user name and modify the password.
- Two types of account can be specified:
 - **Admin (Administrator):** Can access all camera functions, pages and make configurations.
 - **Viewer (Guest):** Can only access the live view page and take snapshots.

4.4.5 Language

The **Language** drop-menu allows you to change the language of the web interface. Supported languages include English, Spanish, Italian, Simplified Chinese and Traditional Chinese. Click **Save** to apply the language setting, and the browser will automatically refresh to reflect the change.



Language

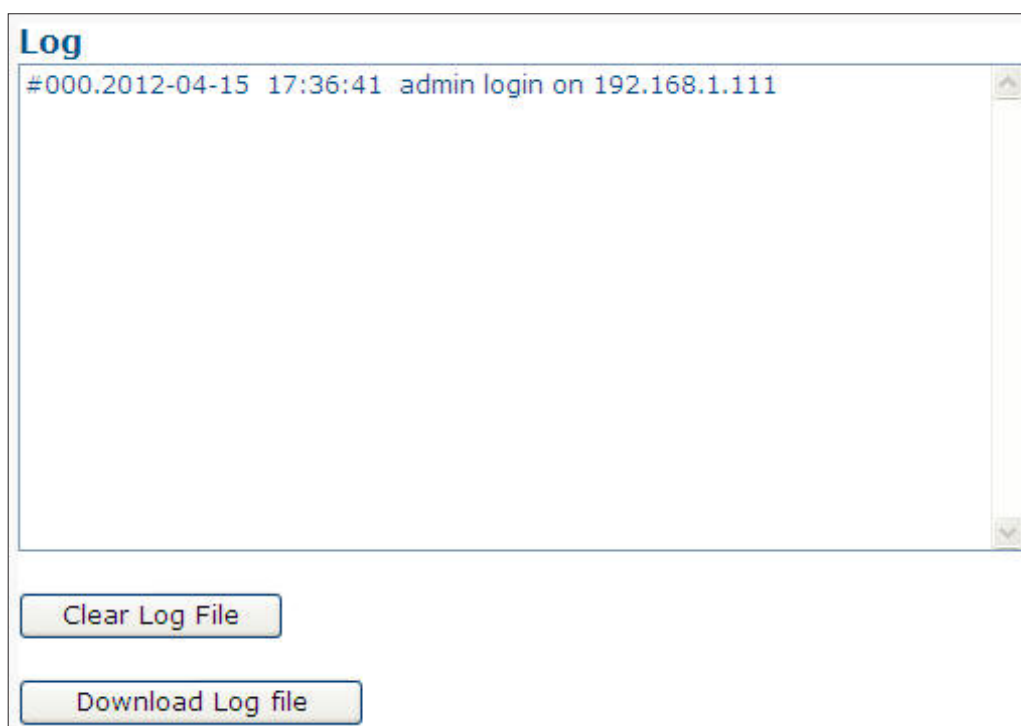
Basic Setting

Language English

Save

4.4.6 Log

This page displays detailed information about the camera's operations and activities, including all the login and alarm records.



Log

#000.2012-04-15 17:36:41 admin login on 192.168.1.111

Clear Log File

Download Log file

- **Clear Log File:** Allows to clear the log on the camera.
- **Download Log File:** Allows to save the log file to a specified location.

4.4.7 Audio

Audio

Audio Receiving ☐ OFF ☒ ON

Audio Receiving Volume ▼

Audio Playing ☐ OFF ☒ ON

Audio Playing Volume ▼

Note:

1. Audio receiving means a PC or other devices may receive the audio transmitted from Camera through audio input jack.
2. Audio playing means Camera may play the audio or soundtrack transmitted from a PC or other devices through the audio output jack.
3. Camera may play the default siren sound once an alarm is triggered.
4. Each audio function is only activated in Live view mode.

- **Audio Receiving:** If a microphone is connected to the camera, you can select **ON** to allow the camera to record the audio and transmit to your PC. This enables the camera to pick up sounds in the background.
- **Audio Receiving Volume:** Allows you to adjust the audio recording volume of the camera.
- **Audio Playing:** If a speaker is connected to the camera, you can select **ON** to allow the camera to play the audio transmitted from your PC. This enables you to speak to the person(s) around the camera.
- **Audio Playing Volume:** Allows you to adjust the audio playing volume of the camera.

Using the two-way audio function

Note that the two-way audio function is **only active in the live view page** using the web browser. When you terminate the web browser session, the audio transmission stops accordingly. To use the two-way audio function:

1. Make sure a speaker is connected to the **Audio Out** port and a microphone is connected to the **Audio In** port of the camera.
2. Enter **System > Audio** and enable both the **Audio Receiving** and **Audio Playing** functions. Then adjust the audio volume to the desired level.

To access the two-way audio streams:

3. Make sure your computer is connected to a microphone and speaker. Enter the **live view page** of the web-based utility.
4. Speak into the microphone and the person(s) around the camera should hear your voice.
5. When people around the camera are talking to you, you should hear them from the speaker that is connected to the computer.

4.5 Event

When an event occurs, it triggers an alarm and the camera will take a pre-defined action, e.g., sending a recorded video clip or JPEG files to a designated server. With this camera, an event can be triggered by external alarm devices or the camera's detection mechanism, including motion, blur, audio and Ethernet detection.



Note

1. When there is more than one recording to be carried out at the same time, the scheduled video recording takes top priority, followed by the recording triggered by an Ethernet disconnection and lastly the recording triggered by other events.
2. Only one event will be handled at a time. If an event is already triggered, other event will be logged to the system but no action will be taken.

4.5.1 Motion Detection

When the **Motion Detection** is enabled, the camera detects motion under a pre-specified condition within a designated area. When motion is detected, the camera will generate an alarm and then take a specified action.

Note that to use the motion detection function, the following two conditions must be met:

1. You must select MJPEG codec for one of the streams to enable the live view.
2. You must select H.264 or MPEG4 codec for one of the streams to process the motion detection.

Motion Detection

Configuration

Motion Sensitivity: Highest 50 (Customized Threshold [1~100])

Save

Motion Area Setting

Save Motion Area

Action

☒ OFF ☐ FTP ☐ SMTP ☐ SD Card

Save

Configuration

- **Motion Sensitivity:** Specify the sensitivity to moving objects before the camera triggers an alarm. The higher the sensitivity, the slighter the movement is required to set off an alarm. You can alternatively

select **User Define** and enter a value from 1 to 100 in the **Customized Threshold** field. When the motion within a specified area exceeds the threshold, an alarm will be triggered.

Select **OFF** to disable the motion detection

Motion Area Setting

- **Motion area setting:** Click target squares displayed on the screen to define detection areas; once configured, click **Save Motion Area** to save settings.

Action

Specify the action to be taken when an alarm is triggered upon motion detection:

- **OFF:** No action will be taken, but an alarm will be logged.
- **FTP:** Recorded video clips/JPEG files will be uploaded to the FTP server when alarm is triggered.
- **SMTP:** Notification email with the recorded JPEG files attached will be sent to the SMTP server.
- **SD Card:** Recorded video clips will be saved to the SD card when the alarm is triggered.

4.5.2 External Alarms

If external alarm devices, e.g., sensors and alarms, are connected to the camera's alarm input/output, the following settings must be made:

External Alarms		
Configuration		
	Setting	Level
Alarm In1	<input checked="" type="radio"/> Disable <input type="radio"/> Enable	<input checked="" type="radio"/> Low <input type="radio"/> High
Alarm Out	<input checked="" type="radio"/> Disable <input type="radio"/> Enable	<input checked="" type="radio"/> Low <input type="radio"/> High
Action		
Alarm In1	<input checked="" type="radio"/> OFF <input type="radio"/> FTP <input type="radio"/> SMTP <input type="radio"/> SD Card	

Configuration

- **Setting:** Enable the Alarm I/O that is connected with the respective external alarm device.
- **Level:** Set the (electricity) current as low or high to define the active state.

Action

Specify the action to be taken when external alarm is triggered:

- **OFF:** No action will be taken, but an alarm will be logged.
- **FTP:** Recorded video clips/JPEG files will be uploaded to the FTP server when alarm is triggered.

- **SMTP:** Notification email with the recorded JPEG files attached will be sent to the SMTP server.
- **SD Card:** Recorded video clips will be saved to the SD card when the alarm is triggered.



To perform a video recording, you must select MJPEG codec for one of the streams.

4.5.4 Blur Detection

With the **Blur Detection** enabled, when the camera detects incidents that make video image blur, e.g. redirection, blocking or defocusing, the camera will generate an alarm and then take a specified action.



Note that to use the blur detection function, the following two conditions must be met:

1. You must select MJPEG codec for one of the streams to enable the live view.
2. You must select H.264 or MPEG4 codec for one of the streams to process the motion detection.

Blur Detection	
Configuration	
Blur Detection:	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
Sensitivity:	<input type="text" value="50"/> seconds (10~600)
<input type="button" value="Save"/>	
Action	
<input checked="" type="radio"/> OFF <input type="radio"/> FTP <input type="radio"/> SMTP <input type="radio"/> SD Card	
<input type="button" value="Save"/>	

Configuration

- **Blur Detection:** Select **Enable** to enable Blur Detection; select **Disable** to disable this function.
- **Sensitivity:** You can alternatively customize the camera's sensitivity to a blur. The camera will judge whether it has been tampered based on the sensitivity threshold specified.

Action

- **OFF:** No action will be taken, but an alarm will be logged.
- **FTP:** Recorded video clips/JPEG files will be uploaded to the FTP server when alarm is triggered.
- **SMTP:** Notification email with the recorded JPEG files attached will be sent to the SMTP server.
- **SD Card:** Recorded video clips will be saved to the SD card when the alarm is triggered.

4.5.5 Audio Detection

With the **Audio Detection** enabled, when the camera detects any sound, the camera will generate an alarm and then take a specified action.

Configuration

- **Audio Sensitivity:** Specify the camera's sensitivity level to the audio signal. The higher the sensitivity, the lower the volume is required to set off an alarm.

When set to **OFF**, the audio detection is disabled.

Action

Specify the action to be taken when an alarm is triggered upon audio detection:

- **OFF:** No action will be taken, but an alarm will be logged.
- **FTP:** Recorded video clip will be uploaded to the FTP server when the alarm is triggered.
- **SMTP:** A notification email attached with the recorded video clip will be sent to the SMTP server.
- **SD Card:** Recorded video clip will be saved to the SD card when the alarm is triggered.



Note

To perform a video recording, you must select MJPEG codec for one of the streams.

4.5.6 Ethernet Detection

With **Ethernet detection** enabled, when the camera detects an Ethernet disconnection, the camera will generate an alarm and then take a specified action.

Ethernet Detection	
Configuration	
Trigger an Alarm when Ethernet is Disconnected.	Setting <input checked="" type="radio"/> Disable <input type="radio"/> Enable
Action	
<input checked="" type="radio"/> OFF <input type="radio"/> SD Card	
<input type="button" value="Save"/>	

Configuration

- **Trigger an Alarm When Ethernet is Disconnected:** Select whether to disable/enable this function.

Action

Specify the action to be taken when an alarm is triggered upon audio detection:

- **OFF:** No action will be taken, but an alarm will be logged.
- **SD Card:** Recorded video clips will be saved to the SD card in AVI format when the alarm is triggered.



Note

Regardless of your settings in **Recording** > **SD card**, when an Ethernet disconnection is triggered, the video clip recording will always be saved in AVI format.

4.5.7 Event Management

Event Management	
Basic Setting	
Alarm Duration	10 Second(s) ▼
Alarm Reset	<input type="button" value="Reset"/>
<input type="button" value="Save"/>	

Basic Setting

- **Alarm Duration:** Specify the duration of the alarm when an event is triggered.
- **Alarm Reset:** Use this button to stop the current alarm and to restart event detection again.

4.6 Recording

Recording allows you to configure recording-related settings and schedule recording. The defaults are listed in the table below:

4.6.1 Settings – Video File

Configure the duration and format of video to be recorded when an alarm is triggered.

Video File	
Basic	
AVI Duration for FTP server:	10 <input type="button" value="v"/> Second(s)
AVI Duration for SD card:	10 <input type="button" value="v"/> Second(s)
AVI Format:	MPEG4(D1) <input type="button" value="v"/>
<input type="button" value="Save"/>	

Basic Settings

- **AVI Duration for FTP Server:** Specify the duration for the video to be recorded and sent to the FTP server.
- **AVI Duration for SD card:** Specify the duration for the video to be recorded to the local SD card.
- **AVI Format:** Select a desired video format. Available formats depend on the primary and the secondary streaming codec/resolution settings.

4.6.2 Settings – FTP

FTP	
FTP Networking	
FTP Server IP:	192.168.1.1
User Name:	
File Upload Path:	default_folder
Storage Setting	
Upload File Numbers	1 (1~20)
File Format:	AVI <input type="button" value="v"/>
<input type="button" value="Save"/>	

FTP Networking

Displays the current FTP settings, which are specified via **Network > FTP**.

Storage Setting

- **Upload File Numbers:** Enter the number of JPEG files to be uploaded to the FTP per event.
- **File Format:** Select the format in which to upload the recorded video file to the FTP server when an event has been triggered.
 - **JPEG files:** The camera will record specified number of JPEG files and upload to the FTP server.
 - **AVI files:** The camera will record AVI files and upload to the FTP sever. For the duration and AVI format, see **Recording > Setting > Video File**.

4.6.3 Settings – SMTP

SMTP

SMTP Networking

SMTP Server IP: 192.168.1.1

Email Address:

Storage Setting:

Attached File Numbers: 5 (1~20)

Attached File Format: JPEG

Save

1. The file number could be limited since the client's SMTP server may regulate & restrain the data volume from senders.

SMTP Networking

Displays the current SMTP settings, which are specified via **Network > SMTP**.

Storage Setting

- **Attached File Numbers:** Enter the number of JPEG images that will be attached to the notification email. Set a lower number if SMTP server has an email size limit.

4.6.4 SD Card Storage Format Selection

SD Card Storage Format Selection

Storage Setting

File Format:	JPEG ▾
Capacity:	N/A(No SD)
Usage:	N/A(No SD)

SD Card Format

Remove SD Card

SD Card Overwrite: ☒ OFF ☐ ON

Save

If you want SD card to recycle the capacity, please set up the overwrite function before the SD card starts recording. The overwrite function will not be activated during recording to SD card.

Storage Setting

- **File Format:** Specify the format of the video to be saved to the SD card when an event is triggered.
- **Capacity/Usage:** Shows the card capacity and the space usage percentage.
- **SD Card Format:** Use this button to format the SD card. This option is not available if an SD card has not been inserted in the camera.
- **SD Card Unmount:** Click this button before safely removing the SD card. This option is not available if an SD card has not been inserted in the camera.
- **SD Card Overwrite:** Select **ON** to enable overwriting once the storage is full.

4.6.5 Period Setting

The Period Setting allows you to schedule video recordings at specified times. Set the automatic recording times by selecting the desired weekday and the period of time. Up to 7 scheduled recordings can be set. Check **Save to SD Card** should you wish to save the recorded video clips to the SD card.

Period Setting

Basic Setting

<input type="checkbox"/>	Monday	▼	From	0	▼	:	0	▼	To	0	▼	:	0	▼
<input type="checkbox"/>	Monday	▼	From	0	▼	:	0	▼	To	0	▼	:	0	▼
<input type="checkbox"/>	Monday	▼	From	0	▼	:	0	▼	To	0	▼	:	0	▼
<input type="checkbox"/>	Monday	▼	From	0	▼	:	0	▼	To	0	▼	:	0	▼
<input type="checkbox"/>	Monday	▼	From	0	▼	:	0	▼	To	0	▼	:	0	▼
<input type="checkbox"/>	Monday	▼	From	0	▼	:	0	▼	To	0	▼	:	0	▼
<input type="checkbox"/>	Monday	▼	From	0	▼	:	0	▼	To	0	▼	:	0	▼

☐ Save to SD card.

The "AVI duration"(in Recording->Setting->Video File)and "Alarm duration"(in Event->Event Management) will not work once any schedule period is set.



Note

The scheduled recording always demands higher priority than the alarm-based recording. When a scheduled recording is proceeding, the alarm-based recording will be disabled but the alarms will be logged.



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